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Universal Protection for AI-Generated Contents Under Copyright Law: Navigating the Ownership and Originality Conundrum

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Abstract

Smart technologies have created the possibilities for machines to learn, understand, perceive, think, interact and produce desired contents without the faintest of human intervention. This novel idea has produced the realities of Artificial Intelligence which has become a global phenomenon. This article engages the impact of copyright regulations on original AI-generated works. Legal frameworks such as the Berne Convention, EU Copyright Law, and individual country legislations are carefully examined. Emerging originality and human impute-factors in Al creativity are critically analyzed with reference to relevant case law. Adopting the doctrinal research methodology which is strictly normative, the paper leverages on the approach of global institutions like the Court of Justice of European Union and the World Intellectual Property Organization to appreciate different engagements by individual nations of the world on the subject matter. Emphasis is laid on the necessity for statutory updates and bureaucratic dynamics to contain the challenges posed by Al-generated works without stifling innovations. A case is made for international collaboration and public enlightenment campaign in designing policies and legislations to protect the copyright of Al-generated works as the world embraces the regime of Artificial Intelligence. Proactive suggestions are put forward as recommendations for the guidance of legislators, policymakers and researchers engaged in the study of the AI evolution.

Keywords: artificial intelligence (AI); authorship; copyright law; intellectual property; originality.

1. Introduction

What constitutes Artificial Intelligence (AI) is subjective and best described as moving target.[1]AI may be conceived as a technological development of computer systems to execute tasks and engage processes that naturally require the cognitive capacity of humans. Sheikh *et al* conceive AI as systems that exude intelligent behaviors by analyzing their surroundings and working

[1] S. Greenstein, "Preserving the Rule of Law in the Era of Artificial Intelligence (AI)", *Artificial Intelligence and Law 30*, (2022): 291–323.

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autonomously to achieve certain tasks.[2] They are broadly programmed to augment the application of machines in complex tasks demanding human-like intelligence. The cognitive behavioral tendencies of AI may support its identity with robots. Some scholars use both concepts interchangeably for the purpose legal definition.[3] The authors however identify robots as possessing bodies and shapes whereas, AI simpliciter may be intangibly configured computer chips. Mickunas and Pilotta state that the tasks for which AI may be engaged are computer vision and pattern recognition, as well as natural language processing.[4] This innovation has brought about generative contents with such originality similar to human's intellectual property. AI's ability to handle human tasks has generated legal inquiries on the legal regime of Al-generated content, particularly with regards to copyright. Sabour and Mehrdel suggest that the intersection between robotics and artificial intelligence algorithms have produced machine personality capable of carrying out functions without the slightest of human intervention. [5] The arrival of AI on the technological space has been transformative, revolutionizing and disruptive of the orthodox human's creative abilities in literary, artistic and more tasking researches or investigative assignments, producing results that ordinarily requires legal protection.[6] The legal protection in the form of copyright guarantees is yet to adequately cater for the surge in most countries of creative works generated by AI solutions. This has, particularly become a concern with contents exclusively generated by computer algorithms and the inability to address the challenges posed by generative AI.

Obviously, human cognitive input in any original work is integral to the definition of authorship which is the basis of copyright. It is such creativity and originality of man's ingenuity that the copyright legal regime evolved to protect and encourage.[7] Author's identification is therefore indispensable in all issues regarding the law on copyright. The copyright granted to an author confers on such author some exclusive rights, including being entitled to financial benefits for the creativity. An author's copyright also entitles him to some moral and enduring rights, including the right of paternity, which allows such author to be recognized by proper name, pen or stage name, and remain anonymous, and the right to integrity, which empowers the author to refuse changes and adjustments that could jeopardize the product's reputation.

The core of the social and economic existence of the copyright regulation and evolution of intellectual property legal principles is human "authorship". Be that as it may, the trite orthodox legal element of authorship has been immensely disrupted by the evolution of AI and its exponential employment as human-assistants in content-creation in multiple areas of human activity, including artistic and literary genres. To this end, it has become a daunting task for policy-makers and the judiciary to determine with certainty, the actual author of a copyrightable work when AI's participation in the content-generation is alleged. The courts are encouraged to seize every opportunity to settle the recondite issues of inventorship of AI-generated works with a view

[2] H. Sheikh, C. Prins, and E. Schrijvers, "Artificial Intelligence: Definition and Background". In: *Mission AI: Research for Policy* (Cham: Springer 2023), 16.

[3] A. Popovic and J. Sabo, "Taxation of Robots and AI – Problem of Definition", *Financial Law Review* 25, no. 1 (2022): 5.

[4] A. Mickunas and J. J. Pilotta, (2023). "A Critical Understanding of Artificial Intelligence: A Phenomenological Foundation", (2023). https://doi.org/10.2174/9789815123401123010l.

[5] Z. Sabour and B. Mehrdel, "New Geopolitics of Artificial Intelligence and the Challenges of Global Governance", *CIFILE Journal of International Law*, 5, no. 10 (2024): 120–144.

[6] H. E. Tianxiang, "The Sentimental Fools and the Fictitious Authors: Rethinking the Copyright Issues of AI-Generated Contents in China", *Asia Pacific Law Review*, 27, no. 2 (2019): 218.

[7] WIPO Secretariat, "Revised Issued Paper on Intellectual Property Policy and Artificial Intelligence", WIPO/1P/AI/2/GE/20/1 REV, (2022): 23.

to allocating proper ownership rights as may be legally apposite, particularly in third-world economies.

Some countries have been proactive in their response to this legal riddle by effecting amendments to relevant domestic statutes to accommodate the copyrightability of computer-generated contents involving human intervention. The United Kingdom (UK), New Zealand, India, Ireland and Hong Kong blaze the trail in confronting matters relating to copyright of AI-generated contents by engaging the judicial mechanism for clarification of the potential areas of conflict.[8] However, no jurisdiction has comprehensively addressed those circumstances where contents are computer-generated with minimal or indirect human input. The evolving grey area has further challenged the policy-makers and judiciary to lay out a broad-based rule to encompass the everchanging AI landscape. Most countries of the Global South are yet to come to terms with this disruptive intrusion of AI which has complicated the orthodox concept of authorship and have, therefore, maintained a dignifying silence. This article engages the complex domain of content-authorship by Al, examining in the process, the disruptive propensity of smart technologies on extant copyright legal framework.

Consequently, the article attempts an analysis of copyright laws and judicial practices in some countries, including the United States of America (US), China, the UK and Nigeria. The jurisprudence from those jurisdictions as well as the various interventions at the European Union (EU) level and the Court of Justice of the European Union (CJEU) are put in perspective. The choice of the jurisdictions mentioned, representing diverse legal traditions, bear relevance to the stability of copyright laws in the countries and their critical handling of issues relating to smart technologies. The selected countries provide a comparative discourse of the subject matter. Relevant statutes, judicial decisions, journal articles and legal opinions are consulted to ensure broad-spectrum analysis of the authorship element requirement for the application of copyright legislations to AI-generated genres. This article sets out as a modest contribution to law and application of copyright laws in the global hemisphere to enrich the understanding of the bar, the bench and the scholars on intellectual property and so enhance efficient justice delivery.

Undoubtedly, much ink has flown in various legal writings on the topic of AI-generated contents and ownership of intellectual property in the content. Confronted with the paramount impact of AI-generated contents and generative computer's substantial intervention in the creative chain of the contents, Gaffar and Albarashdi contend that it has become imperative and inevitable for lawmakers to establish a clear legal framework which defines the exact legal relationship between computers and their operators or programmers.[9] Their work failed to identify the link between copyright and patent. On his own part, Oriakhogba, addressed the issue of ownership from the angle of patent and wondered what Africa would have done if DABUS came to Africa?[10] The question of what Africa (Nigeria) would have done is the crux of Adaka and Olubiyi's work which leveraged on South Africa's experience to suggest stronger statutory regime for copyright.[11] This work shows from the movement of DABUS that copyright laws should be unified and strengthened by statutes as the world becomes one global community. This is because issues of particular legal requirements and their impacts on the definition of originality with

[8] s. 9(3) of the Copyright, Designs, and Patents Act (CDPA) of 1988 (UK); s. 5 of New Zealand Copyright Act 1994.

[9] H. Gaffar and S. Albarashdi, "Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape", *Asian Journal of International Law,* (2024): 1–24, 9.

[10] D. O. Oriakhogba, "What If DABUS Came to Africa? Visiting AI Inventor-ship and Ownership of Patent from the Nigerian Perspective", *Business Law Review*, 42, no. 2 (2021): 89-99.

[11] E. E. Adaka and I. A. Olubiyi, "Lessons for Nigeria: Determining Authorship and Inventorship of Artificial Intelligence Generated Works", *Journal of Intellectual Property and Information Technology Law*, (2022): 2, 5.

regards to AI-generated works within the common and civil law jurisdictions are yet unsettled. There is a dearth of comparative discourse of the framework-design by different countries in tackling the riddle posed by the urgent need for copyright guarantee for AI-generated contents. Existing literature generally dwells on the ordinary confluence between AI and copyright statutes, without painstakingly considering the trite requirement of originality for AI-generated genres. This article addresses these gaps by a comprehensive approach to the idea of originality in AI-generated contents from the standpoints of the two complementary legal traditions – the common law and civil law – with a sharp concentration on copyright legal regime. The conclusions and lessons drawn from the article will contribute to the global discourse on AI as an evolving topical issue, setting down the framework for a continued discussion of the subject matter with the ultimate goal of a just administration of copyright law in all cases involving generative AI. In this article, work may be used interchangeably with content and genre.

2. Results and discussion

2.1 *The concept of "authorship" and the disruptive realities of ai's capacity to distinctively create literary and artistic contents*

Within the domain of artistic and literary genres, the idea of authorship has permanently depended on the input of human cognitive abilities resulting in creativity. This explains the grant to human authors of certain exclusive rights over such original artistic creations. Consequently, original authors enjoy the exclusive privilege to publish their contents, harvest the financial benefits, sell patent rights or franchise over the contents, assign beneficial ownership interests in copyrights, and protect the integrity of the brand by challenging any actions that could jeopardize or adulterate the work. Authorship is the very basis of the law of copyright which evolved to protect intellectual property and encourage innovations. Locke's labor theory postulates that the community consideration of the inventor's input coupled with sundry resources justified the author's right over the fruit of his labor. Locke's thesis was rejected based on the facts that the *sweat of the brow* theory cannot be used to stretch copyright regime to factual information.[12] The Berne Convention (BC) offers fundamental principles or determinants in the legal definition of authorship.[13] The BC as international treaty guarantees global copyright privileges to artistic and literary works for the benefits of the authors and their successors-in-title.[14] It seeks to encourage creativity by encouraging authors with the grant of standing to declare their rights and protect their creative contents. BC eliminates any ambiguities pertaining to the author's identity as a way of ensuring transparency by providing for the inclusion of the author's name or the stage or pen name as may be apposite. Ezema and Ibekwe argue that the BC could not specifically define the term "author".[15] It is posited that the non-particularized definition of 'author' in the BC was because of the mutual understanding at the time of who an "author" should be, which was without ambiguity. Thus, copyright law follows the foundations laid by the BC and other relevant treaties in regards to art and literary genres to acquire global recognition.

The questions of author's identification and the attendant copyright have engaged intellectual property (IP) jurists over time. The arrival of AI on the scene has complicated

[12] A. O. Ezema and C. S. Ibekwe, "Ownership of Copyright in Works of Artificial Intelligence: Need for A Legal Framework", *Journal of Public and Private Law UNIZIK*, 10, (2020): 112.

[13] Berne Convention for the Protection of Literary and Artistic Works, 4 May 1896, 828 U. N. T. S. 221 (entered into force 29 January 1970) as amended 28 September 1979 (BC).

[14] BC, Art. 2: 6

[15] Ezema and Ibekwe, (n. 12) 113.

intellectual property discourses, leaving more questions than answers.[16] Mayana *et al* (2024) posit that the Industrial Revolution has left in its trail an era of automation that requires insignificant human contribution. Conflict between Copyright law and emerging technologies is not recent.[17] In 1978, the US government set up the Commission on New Technological Uses of Copyrighted Works (CONTU) in 1981 to appraise issues emanating from smart technological developments. CONTU suggested fundamental adjustments to copyright law in which it proposed the recognition of computer programs as admissible for copyright protection and expanding the web of copyright provisions to all uses of copyrighted programs in computer-related operations. Furthermore, CONTU emphasized the necessity to warrant that the actual possessors of copies of computer programs are persons who are lawfully at liberty to use and adapt those copies within the boundaries of copyright law. In 1986, the Office of Technology Assessment (OTA) carried out a study on evolving technologies' impact on intellectual property. OTA's report revealed significant impact of advancements in technology on intellectual property which resulted in statutory amendments to mitigate the devastating effects without stifling innovations.

The development of AI algorithms heralded a hypersonic transformative-impact of new technologies on human activities.[18] The ubiquitous nature of these Algorithms has influenced diverse spheres of human activities beyond the capacity for future predictions. The revolutionary capacity of AI algorithms has redesigned human perception of smart technology and the influence it brings to bear on the electronic metaverse.[19] Thus, smart technologies have shown capacities to go beyond human's appreciation of art and sundry activities in terms of learning and adaptations to challenges. Generative AI has been able to write poems, novels, and engage other human cognitive activities hitherto reserved for the cultivated mind.[20]

Japanese-Originated generative AI wrote a novel in 2016 with the title, *The Day a Computer Writes a Novel*. The novel was eventually published and it was embraced by large followership resulting in its being listed among novels considered for the award of the coveted *Star New First Prize*. In a similar development, a generative AI of British origin which learned and assimilated the poetry styles of Osward and Armitage wrote a classical poem.[21] Jukedeck, a corporate entity, celebrated the rare achievement of training its computer machines to compose different kinds of music genres such as blues, rock, jazz, reggae and calypso. The AI was able to compose melodies independent of human intervention.

The SKYGGE's creation titled *Hello World* shows a perfect collaboration between humans and machines in content creation.[22] The intersection between human and AI in the invention capability is evident in *Zarya of the Dawn,* a comic literary genre submitted to the US

[16] P. Samuelson, "AI Authorship?", *Communications of the ACM*, 20, 63 no. 7 (2020): 22.

[17] R. F. Mayana et al, "Legal Issues of Artificial Intelligence-Generated Works: Challenges on Indonesian Copyright Law", *Law Reform*, 20, no. 1 (2024): 55.

[18] I. H. Sarker, "Machine Learning: Algorithms, Real-World Applications and Research Directions", *SN Computer Science*, 2, no. 3 (2021): 160.

[19] O. Kostenko et al. (2022). "Genesis of Legal Regulation Web and the Model of the Electronic Jurisdiction of the Metaverse", *Bratislava Law Review*, 6, no. 2 (2022): 21-22.

[20] M. Busuioc, "Accountable Artificial Intelligence: Holding Algorithms to Account", *Public Administration Review*, 81, no. 5 (2020): 825–836.

[21] A. Flood, "A Box of Light: AI Inspired by British Verse Attempts to Write Poetry", *The Guardian* (20 March 2021). https://www.theguardian.com/books/2021/mar/20/a-box-of-light-ai-inspired-by-british-verse-attempts-to-write-poetry.

[22] M. Avdeeff, "Artificial Intelligence & Popular Music: SKYGGE, Flow Machines, and the Audio Uncanny Valley," *Arts*, 130, 8 no. 4 (2019): 11.

Copyright Office in September 2022 for copyright.[23] In the Zarya episode, the Copyright Office, in a reviewed investigation, severed the aspect of the content which was solely invented by the Midjourney's AI. There was no evidence of human imprint to bring the content within the ambit the law in respect of copyright of AI-generated contents.[24] The foregoing illustrations demonstrate the capacity of generative AI to create contents with or without human collaboration or promptings. The implication is that the originality rights of those works generated by AI may require protection of the law to avoid piracy and abuses which may arise should such works be left in the common pool of non-ownership. It becomes germane to evaluate the regime of copyright law over AI-generated works.[25]

2.2 *The legal threshold of authorship and the AI-generated contents*

Copyright legal framework has undergone several adaptations from the earliest time in history when art and literary works were reduced in prints and other permanent forms of storage. It has continued to evolve with the changing faces of commerce to protect innovations and deter unfair trade competitions unto the 21st Century, an era of visible cyber community. AI solutions' capacity to create genres with such originality unknown to human creative thinkers has disrupted the traditional patent and copyright legal principles. Questions are being asked and legal energies are being invested into discovering the "actual" author of generative AI contents – human programmer or the machine as an independent device. In an attempt to unravel the riddle over the authorship requirement in copyright law applications in respect of AI-generated contents, it may be apposite to draw on the non-contested assumption of members at the time the Berne Convention was adopted in respect of what authorship connotes. The innocent position has continued to elicit constructive critique in the face of the ever-evolving AI capabilities till date. The context and indications within the BC point unequivocally to the fact that the term authorship relates to both human author and legal entities. Thus, the exponential involvement of generative AI in content creation has raised concerns over the sustained fixation on the customary pre-requisites of copyright legal application, the likely influence of intelligent machines on human – associated copyrights and the identification of author in circumstances where a content is created, independent of any human input.

2.3 *The debate: Should the human factor be step-sided in considering copyright protection to AI-generated works?*

Copyright legal framework evolved for the protection of creativity and innovation. For any content to be patented or be admissible for copyright protection under the legal system, such creativity or innovation sought to be protected must necessarily be attributable to an original-author. This requirement, which cuts across legal jurisdictions, is critical and indispensable in the

[23] N. Sans, "The U.S. Copyright Office's Zarya Decision, and the Uncertain Future of AI Comics", *The Columbia Journal of Law & Arts*, (2023). https://journals.library.columbia.edu/index.php/lawandarts/announcement/view/617.

[24] United States Copyright Office, "Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence", *Federal Register: Daily Journal of the United States Government*, (2023). https://www.federalregister.gov/documents/2023/03/16/2023-05321/copyright-registration-guidance-works-containing-material-generated-by-artificial-intelligence.

[25] C. Novelli, G. Bongiovanni and G. Sartor, "A Conceptual Framework for Legal Personality and its Application to AI", *Jurisprudence*, 13, no. 2 (2022): 194–219.

application of copyright laws to any work. [26] The human input was taken for granted as the cognitive prowess inherent in man gives humans the exclusive creative capacity. Humans were, therefore, encouraged to be creative as labor is deserving of benefits.[27] The justification of exclusiveness assigned to the creator of a patentable content is because the author is an inventor within the matrix of Locke's economic theory of possessive individualism. The two elements of tangibility (form) and originality (authorship) become essential for the operations of copyright laws. The BC is a fundamental treaty which recognizes and protects creative-authors' patent rights globally. Such authors may be natural individuals, organizations or any other entity capable of legal recognition. The Nigerian legal system recognizes only natural persons and incorporated entities.[28]

BC has influence over the copyright laws in Europe. The sources of copyright legal framework for European Union (EU) are inclusive of international treaties, Union legislation, and municipal law. While the first two has uniformity, the last, that is, the national law determines the variations in the application of copyright laws in EU member states in accordance with individual legal system. Thus, in the Common Law tradition of the UK, Ireland, Cyprus and Malta, economic rights are prioritized while moral rights are relegated to the background. Under the system, the author's patent rights are entrenched as moral rights which may be waived.[29] Conversely, continental Europe, influenced by of the French jurisprudence, conceive 'authorship' as an amalgam of moral and economic rights. The right to integrity and identification which consist in moral rights are fundamental and incapable of alienation, delegation or waiver unlike economic rights. The copyright legal framework in UK has developed to the point of recognition for computer-generated genres by assigning authorship to the natural individual who made preparations, undertook and arranged for the creation of the content.[30] The law grants the author 50-year protection, excluding moral rights. The position in the UK is akin to what obtains in New Zealand in which jurisdiction the copyright of computer-invented content is conferred on whomsoever undertook the relevant steps to ensure the invention of the work and not the independent computer.[31]

Similarly, the Chinese Copyright laws aim to protect the authors of original literary and artistic contents. The protection of the law attached automatically to an inventor upon authorship of a patentable work. Consequently, such author may exclusively reproduce, exhibit, distribute, adapt, broadcast, perform, translate and maximize economic benefit of his work without reference to external persons or authorities.[32] The US Code, Title 17 protects the privileges and benefits of authorship of artistic and literary works. The law is expansive enough to cover original works by such authors fixed in tangible forms of expression such as, literary, dramatic, graphic, musical, pictorial, sculptural, architectural, and electronic, including motion pictures and

[26] P. B. Hugenholtz and J. P. Quintais, "Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?" *IIC-International Review of Intellectual Property and Competition Law*, 52, no. 9 (2021): 195-96.

[27] S. Tripathi and C. Ghatak, "Artificial Intelligence and Intellectual Property Law", *Christ University Law Journal*, 7, no. 1 (2021): 83.

[28] Copyright Act, Laws of the Federation of Nigeria, (LFN) 2004, s. *2*(1).

[29] Copyright, Designs and Patents Act (CDPA) 1988 [UK].

[30] *Ibid*., s. 9 (3).

[31] New Zealand Copyright Act 1994, s. 5 (2) (a).

[32] China IPR SME Helpdesk, "Copyright Protection in China: A Guide for European SMEs. *China IPR Helpdesk online: European Commission"*, (2020). https://intellectual-property-helpdesk.ec.europa.eu/system/files/2020-10/ENCopyright guide Aug 2010.pdf.

audio recordings.[33] However, the law confers the right of authorship on the human operator or programmer of the machine which produced the patentable content in all events of machine-generated works. The machine or AI may in the circumstances be cited as a gear deployed in the creative process. This is because, as Seghal and Qureshi conceive, the capacity of computer machines to perform tasks autonomously is inversely proportional to the human influence over them.[34] In *Burrow-Giles Lithographic Co. v Sarony*,[35] the camera used to capture the photographic image of Oscar Wilde by Napoleon Sarony was held by the court as an instrument which assisted the photographer in the inventive-chain of the photograph which qualifies as an artistic content. The law that only humans are capable of taking advantage of copyright legal framework is fortified by the US court decision in *Naruto v Slater (Monkey Selfie Case)*.[36] In the case, David Slater, a renowned wildlife photographer while on a visit to a zoo in Indonesia allowed his camera to be explored by Naruto, a curious monkey, which took selfies of itself. Slater published pictures of the monkey which prompted People for the Ethical Treatment of Animals (PETA), an animals' rights group to sue Slater in behalf of Naruto claiming that Naruto was entitled to copyright which has been infringed in the circumstances. The Court of Appeals for the Ninth Circuit upheld the submission that copyright protection is not available to animals, because they are non-human entities.

From the foregoing, through the influence of the BC and other regional and municipal statutes like the EU copyright law, and copyright laws in China, UK, Nigeria, New Zealand and the US, there is a long line of consistency in the legal ingredient of human input in the definition of authorship and application of copyright. These legislations emphasize the recognition and preservation of the rights of human inventors as the original authors of literary and artistic genres.

2.4 *The idea of "authorship" under the common law*

Common law countries such as the UK, the US, Ireland, Cyprus, New Zealand and Malta, have engaged arguments on the imperativeness of recognizing non-human authors in copyright legal applications.[37] These Common Law countries incentivize innovation by providing public access to creative works in accordance with utilitarian theory, for the benefit of society. Under this approach, the personal imprint or identity of the author is de-emphasized in such a manner as to accommodate non-human authors. However, the US Supreme Court, has been consistent in maintaining its stance that copyright law applies only to works authored by humans. Thus, in the *Sarony case*,[38] the court defined an author as the "originator" or "maker" to whom a work owes its origin. The court specifically referred to photographs as representatives of the original intellectual conceptions of an author. Similarly, in the case of *Goldstein v California*,[39] the Supreme Court further stated that an author is the individual-original-creator who composes or writes a work. The "author" is the "originator" to whom the work owes its originality. In this case, the court convicted the appellant for record piracy. These legal positions authenticate the relevance of human participation and productivity in the whole idea of authorship. They identify with the cognitive input of human in conferring originality on a creative work thereby highlighting

[33] Copyright Review Board, U.S. Copyright Office, "Re: Second Request for Reconsideration for Refusal to Register a Recent Entrance to Paradise", (2022). Correspondence ID 1-3ZPC6C3; SR # 1-7100387071.

[34] M. N. N. Seghal and A. I. Qureshi, "Lethal Algorithms: Ethical and Legal Quandaries of AI in Warfare", *CIFILE Journal of International Law*, 25, no. 10 (2024): 145, 149.

[35] *Burrow-Giles Lithographic Co. v Sarony,* 111 U. S. 53 [1884].

[36] *Naruto v Slater*, No 16-15469 (9th Cir. 2018) [US].

[37] Gaffar and Albarashdi, (n. 9), 8.

[38] *Sarony,* (n. 38).

[39] *Goldstein v California,* 412 U.S. 546 [1973].

the requirement for human originators to be exclusively recognized as "authors" within the legal framework. Originality is inextricably tied to human ingenuity. In *Feist Publications, Inc. v Rural Telephone Service Company, Inc.*,[40] the requirement of originality as well as the human imprint factor in copyright legal regime was reiterated by the court. By this decision, ordinary factual information or data programming without human-creative efforts would not meet the legal requirement for copyright protection. Therefore, to qualify for copyright, a content must show a unique and originally generated work or expression from a human-author.

Following the common law tradition of judicial precedents, the human element of authorship has percolated the legal system. Consequently, the Ninth Circuit Court of Appeals ruled in *Urantia Foundation v Maaherra*,[41] that a book with contents allegedly "authored" by some spiritual beings who are proved to be non-humans requires evidential prove of human selection and arrangement of the content for it to be acceptable eligible for protection under copyright law. It is posited that based on the foregoing decision the US Copyright Office rightly conceived the law when it recently rejected an application for copyright protection of a work titled *A Recent Entrance to Paradise*. The board had cited lack of human authorship as a desideratum in justifying their decline.[42]

Accordingly, the court ruled in *Cetacean Community v Bush*,[43] that monkeys, like other animals lack the requisite statutory standing to claim under the Federal Copyright Act. The court took similar position where copyright action was filed in behalf of a garden. In *Kelley v Chicago Park District*,[44] it held that a copyright protection claim was invalid in the context of a living garden. According to the court, a living garden lacks the necessary features of authorship (cognitive) and stability (originality) which are legal prerequisites for copyright privileges. Unlike fixed and tangible works of art, such as a literary genre or a sculpture, a garden is an unstable entity that is regularly cultivated and subject to whether dynamics. It is therefore not competent as a permanent content deserving of copyright protection. The court laid down the rule requiring certain level of permanence and fixation for a work to qualify for copyright protection. In the light of the *Sarony* case, it is posited that the proper copyright in the garden resides with the cultivator of the garden, not the garden itself as the garden neither cultivates, nor dresses itself.

In the emerging global space of AI's intersection with copyright laws, the courts have been inundated with cutting-edge disputes which have placed the complexities of bringing AI-generated content within the ambit of copyright laws in the front burner. In 2023, Getty Images brought an action against Stability AI alleging the misuse of patented images in the training of its AI systems.[45] It was reported that Stability AI allegedly copied about 12 million patented photos from Getty Images for the programming of its AI specification known as Stable Diffusion System. Getty Images has approached the UK courts to stop sales of the infringing AI solutions.[46] It is not disputed that the photos complained about originated from Getty Images. Similarly, the courts in the US have turned down efforts to get the US Copyright Office to countenance an application for

[40] *Feist Publications, Inc. v Rural Telephone Service Company, Inc.,* 499 U.S. 340 [1991].

[41] *Urantia Foundation v Maaherra,* 114 F.3d 955, 964 [1997].

[42] Copyright Review Board, (n. 36).

[43] *Cetacean Community v Bush,* 249 F. Supp. 2d 1206 [2003].

[44] *Kelley v Chicago Park District,* 635 F.3d 290, 304 [2011].

[45] B. Brittain, "Getty Images Lawsuit Says Stability AI Misused Photos to Train AI", *Reuters, online* (2023). https://www.reuters.com/legal/getty-images-lawsuit-says-stability-ai-misused-photos-train-ai-2023-02-06/.

[46] S. Tobin, "Getty asks London court to stop UK sales of Stability Al system", *Reuters, online* (2023). https://www.reuters.com/technology/getty-asks-london-court-stop-uk-sales-stability-ai-system-2023-06-01/.

copyright protection of contents created by generative AI, for lacking in authorship and in so doing fortified the human element requirement of authorship in the conception of copyright legal applications.

It has become imperative in the circumstances to define the limits of copyright application in cases involving contents created by generative AI. In the light of abundant case law, it is doubtful if any applications made to patent contents generated independently by AI and without human collaboration would be accommodated within the legal framework.

2.5 *The challenge of AI "authorship" under Asian legal system*

Like the UK and US, the Asian copyright systems, grant authorship to humans. The Chinese legal system settled the question of authorship in Al-invented contents in a recent lawsuit. Given China's supersonic development on smart technologies, it is expected to chart the course for the rest of the world. In *Shenzhen Tencent v Shanghai Yingxun*,[47] the Nanshan District People's Court deliberated upon the copyright-ability of contents created by Dream Writer Al solution. The court stated that any individual claiming authorship must meet the general threshold of intellectual creativity under Chinese law, to be able to succeed with the claim. Authorship is the springboard of a claim in copyright. Again, in *Gao Yang v Youku*,[48] a Beijing Court attended to a case on the patentability of picture-images autonomously generated by a plaintiff's camera-machine attaching a hot-air balloon. The court held that the pictures were indeed qualified for protection under China's copyright legal regime. The defendant's use of the pictures without authorization of the plaintiff was an infringement on plaintiff's copyright protection. It is posited that the decision of the Beijing court aligns with established principles of copyright law across the globe. The court recognized plaintiff's indirect intervention in the creation of the photo-images – plaintiff owns the camera, he programmed, positioned or fastened it to the hot-air balloon for the purpose of taking such pictures. The camera may aptly be described as instrument in the procedural chain of the image creation thereby qualifying the plaintiff to every privilege in relation of the content under copyright law.

The India's copyright law ascribes authorship of machine-created contents to the human who took relevant steps and made the required preparations for such contents' generation. To this end, the human interventionist is at all material times considered the power and brain behind the originality of the work despite the critical inputs of the machine in generating the content. [49] Although section 2 (d) of India's 1957 Copyright Act (1957) does not explicitly define "author" for artistic and literary works, it provides sufficient guide as to whom a copyright protection may accrue. The Act identifies an "author" of a literary or dramatic work as the person who created the work or the artist with reference to an artistic work, while for a musical content, it refers to the composer. The Act identifies the person who takes the snapshot as the "author" in the case of photographs.

Similarly, copyright law of Singapore emphasizes the involvement of human authors in preference to computer-agents in its operations. The Singaporean Court of Appeal demonstrated the necessity for human authorship of copyrightable contents in the case of *Asia Pacific Publishing Pte Ltd v Pioneers & Leaders (Publishers) Pte Ltd*,[50] where it interpreted section 2 (7) of the Singapore Copyright Act of 1911. The court held that the absence of clear

[47] *Shenzhen Tencent v Shanghai Yingxun,* [2019] Yue 0305 Min Chu No. 14010.

[48] *Gao Yang v Youku,* [2017] Jing 73 Min Zhong No. 797.

[49] A. Guadamuz, "Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works", *Intellectual Property Quarterly*, 2, (2017):169.

[50] *Asia Pacific Publishing Pte Ltd v Pioneers & Leaders (Publishers) Pte Ltd (*SGCA 37, 2011*).*

definition of "author" in the copyright law cannot be stretched to extend copyright protection to contents invented by to non-natural human entities such as corporations. The court was mindful of the evolutional trajectory of copyright which conceived legal rights as devolving exclusively on human individual since only natural humans are capable of exercising cognitive denomination required for inventions. Put in another way, the law ties originality to human creators. This implicates that the presence of human author was *sine qua non* in all matters for consideration of a patentable content or definition of originality. The 1911 Copyright Act could be said to be good law considering its time and space. However, in the era of generative AI the law is expected to shine the light as dispute arising from smart technologies and e-commerce surge. Regretfully, the court was too careful to blaze the trail in this area. In *B2C2 Ltd v Quoine Pte Ltd*,[51] the Singapore International Commercial Court was saddled with the task of resolving a dispute arising from the involvement of AI algorithms in cryptocurrency transactions. The court had to decide on the liability of AI in the cryptocurrency market which the AI engages in with absolute independence. The court stated that in such situations where computers replace humans, liability should be ascribed based on knowledge attribution. This is because the activities of the AI in the circumstances are deterministic having been programmed to act in a given manner by the human instructions.

The Nigerian Copyright Law streamlines patentable works by statute. Section 1 of the Copyright Act enumerates copyrightable works to include literary genres, artistic works, cinematograph films, musical works, sound recordings, broadcasts and podcasts.[52] The content creator is required to give the content an original feature, package in a definite medium of expression now known or later to be developed with the capacity to be perceived, reproduced or otherwise communicated directly or with the aid of a machine or device. A community reading of the law reveals that AI may not be accommodated within the legal framework. This is because AI solution run on software which is protected under the copyright in its original documented expression. Secondly, AI is neither a natural or legal personality.[53] It is argued that the original expression envisaged by the law cannot be stretched to extend to the functionality of the software. The law limits protection to the blueprint of the patentable content which in respect of AI is of no moment.[54]

Australia and Thailand have no framework for adequate protection for works of art originated by machines or computer algorithms. The countries maintain the age-long prerequisite of human authorship which is lacking in the configuration of generative AI. They do not show the conjunctive elements of effort, knowledge and intellect that underline the concept of originality. It is of no moments that such contents created by AI are unique and ground-breaking.[55]

2.6 *Copyright law extension to AI-generated contents: To be or not to be?*

The increasing engagement of AI in content generation has become a topical issue at global fora. The development has elicited broad policy framework impacting the copyright legal

[51] *B2C2 Ltd v Quoine Pte Ltd,* SGHC (I) 03 [2019*]*.

[52] Nigeria Copyright Act, (n. 28), s. 1.

[53] O. Ajayi, "Innovation and Legalities: Generative AI and Intellectual Property in Nigeria", *IP Newsletter* (2024): 4-5.

[54] *Microsoft v Franike Associates Limited,* [2012]. See also, s. 6-8 of the Copyright Act (n. 31).

[55] N. Suwan-in, "Copyright Protection on AI-Generated Work: The Case Study of the US, UK, and Thailand Copyright Laws", *Journal of Law Public Administration and Social Science* (2021): 131, 142. See also The Australian Copyright Act 1968 (Cth) (Copyright Act) and *Ice TV Pty Ltd v Nine Network Australia Pty Ltd* [2009] HCA 14, where the High Court of Australia held that factual data contained in a compilation is insufficient to warrant protection under the Copyright Act.

system. The World Intellectual Property Office (WIPO) organized a workshop for a Conversation on Intellectual Property Policy and Artificial Intelligence which focused on the AI's disruptive intervention on intellectual property law by its increasing capacity to originate literary and artistic works.[56] The AI revolution within the copyright framework has created a sure intersection with the human cognitive and creative prowess crystalizing into a reliable alternative for creative expression. Invention of AI solutions have raised the bar for necessity to re-calibrate the traditional copyright legal regime anywhere in the world in order to properly situate rights and liabilities.

The primary purpose for the evolution of the copyright legal regime is to encourage human creativity by establishing a social system of reward for inventors. The advent of generative AI into the socio-economic space and the resultant campaign for patentable AI generated contents has challenged the social basis upon which copyright system is anchored. Copyright system exists to uphold the dignity of human and to incentivize originality.

At WIPO's workshop, which actively sought to address the intersection of AI and copyright law, it was argued against copyrighting AI generated works for some reasons. First, the element of human authorship required in copyright is lacking in AI solutions.[57] Again, expanding the copyright law to accommodate AI generated contents would diminish the public domain and generate intractable policy concerns in the AI's ever evolving landscape. This argument recommends that AI works should be consigned to public domain to guarantee accountability in the copyright framework.

Conversely, it was contended in favor of copyrighting AI-generated contents that denying AI contents of copyright protection on grounds of absence of human authorship would consign valuable works of art into the public domain where such works may be subjected to abuse for lack of bureaucratic governance.[58] It was further argued in favor of copyrighting AI-generated contents that failure to copyright them would erode the zeal for creativity. The drive for innovations has been the inherent weapon of human conquest of his environment. Any policy that tends towards stifling creativity is indirectly winding down human existence. Against the backdrop of propositions as obtainable in Nigeria which recognizes the blueprint software of AI solution but rejects the output for copyright protection, Abbot posits that granting patent protection to the entity or programmer who created the software used by AI is inherently contradictory when protection is denied to the outputs of the same software.[59] The arguments define the need to accord recognition and protection to generative AI and their generated contents.[60] The approach of rewarding the creative elements with copyright protection would engender innovations and greater access to creative works. Against this background, Peng advocates for the necessity of adapting copyright law to accommodate innovations in smart technology through appropriate legal and policy frameworks to support and incentivize AI-powered creativity.[61] The synthesis of

[56] WIPO, (n. 7): 23.

[57] *Ibid*.

[58] J. Zhang and X. Xie, "Research on the Copyright Protection of Artificial Intelligence Generation in the Smart Media Environment", *3rd International Conference on Public Management and Intelligent Society* (PMIS), 2023, 665.

[59] R. B. Abbott, "Artificial Intelligence, Big Data and Intellectual Property: Protecting Computer-Generated Works in the United Kingdom", In *Research Handbook on intellectual Property and Digital Works in the United Kingdom Technologies*, edited by T. Aplin (Edward Elgar Publishing Ltd, 2017). *Social Science Research Network*. https://ssrn.com/abstract-3064213.

[60] Adaka and Olubiyi, (n. 11).

[61] S. Al-Sharieh, "The Intellectual Property Road to the Knowledge Economy: Remarks on the Readiness of the UAE Copyright Act to Drive AI Innovation", *Law, Innovation and Technology*, 13, (2020): 41.

the opposing views resulted in the resolution that AI generated-genres should be admitted for copyright protection.

2.7 *Fundamental considerations in vesting and attribution of ownership of copyright in AI-invented works*

The idea of "authorship" in copyright legal framework resonates with the maker or creator of a patentable work. The basic understanding of authorship is not in any way diminished by the manufacture of AI algorithms. The riddle around author's identification in genres invented by AI is of no moment as there would truly be no contents except by human programming. This truth points inevitably to human creativity and originality in the circumstances. To this end, the argument that AI should be regarded for all purposes as a machine or tool in the hand of a human author instead of an independent originator of contents aligns with logic. The assignment of human authorship to AI generated contents establishes a causal nexus between the human inventor and the resultant product which manifests in the content-creation. This is imperative in identifying the extent of authorship or co-authorship in AI programming where, as expected, more than one human's ingenuity is invested in the configuration process.

The human authorship approach resonates with statutory provisions in diverse countries. Section 9 (3) of the Copyright, Designs and Patents Act (CDPA) of 1988 [UK] provides for the person who undertakes the necessary arrangements for the creation of the work to be considered as the author in the case of a computer-generated literary, dramatic, musical, or artistic works. Also, section 178 of the CDPA stated AI-generated works to be those works produced by a computer in circumstances where no human author is involved. The jurisprudence pervades the legal landscape in countries such as Ireland, New Zealand,[62] and Hong Kong.[63] In the foregoing enumerated jurisdictions, the law regards the person who makes the essential arrangements for the creation of a computer-generated work to be the author of the content.

The laws of the UK protect computer-generated contents in circumstances of unidentified human authorship under copyright provisions. The legal system acknowledges the labor of the individual who takes the essential steps to bring about the creation of such works. Consequently, copyright benefits inure in favor of a substantial contributor in the arrangement of the process resulting in the capacity of the AI to generate the desired content. Thus, human intervention is highly recognized even where the eventual process is autonomously created by the AI.[64]

The computer-algorithm has the inherent ability to invent content independent of external aid. This scenario puts the AI technical program or software in proper contention for copyright ownership. The extant technology was not within contemplation decades ago, prior to computer revolution. The possible disjoint between human involvement and computer's output

[62] Section 5 of the New Zealand Copyright Act (1994) defined author as follows:

(1) For the purposes of this Act, the author of a work is the person who creates it.

(2) For the purposes of sub-section (1), the person who creates a work shall be taken to be:

(a) in the case of a literary, dramatic, musical, or artistic work that is computer-generated, the person by whom the arrangements necessary for the creation of the work are undertaken.

[63] Section 11(3) of Copyright Ordinance (CO) Cap. 528, states, 'ln the case of a literary, dramatic, musical or artistic work which is computer-generated, the author is taken to be the person by whom the arrangements necessary for the creation of the work are undertaken'.

[64] R. M. Yankovskiy, "Is Artificial Intelligence Capable of Writing a Law Journal Article?" *Zakon [The Statute]*, 3, (2023): 131.

positions the AI programmer as an independently contender for copyright benefits.[65] It is posited that where the user's undertaking in the setting up of the computer-machine solution is too remote or insignificant to pattern the creative nature of an AI-invented content, the human who programmed the work in its blueprint should be designated as the author. By this reasoning, the copyright law recognizes originality in respect of specific contents which flows from the start of the computer configuration.

Denicola suggests that copyright protection should be granted to those who developed and established the AI solution that eventually creates the patentable work.[66] This would settle the distrust created by the definition of AI as tool or instrument in the generation of the content sought to be patented. The unrealistic nature of the expectation of human intervention in every AI-generated content galvanizes the focus of the copyright law on remotest human imprint requirement for originality. The truth is that casting the human input requirement element in copyright cases in iron would negate the complex and unique nature of works created by AI applications. The law must develop to contain the new complexities. AI applications are smart and abstract in their operations and so not amenable to traditional idea of authorship which is inextricably tied to human creative imprints. By and large, it is more logical and pragmatic to ascribe ownership of the patentable work to the owner of the AI program who also should bear liabilities for the flip side of the AI's activities.[67]

2.8 *Can AI-generated works be regarded as original if copyright is attributed?*

Originality is critical to the success of all applications for patent under copyright law. It is the scale by which a content is weighed for eligibility for legal protection in copyright. The term is basically used to distinguish innovations or inventions from pirated or copied contents. Azoro and Agulefo conceive "originality" as implicating that a patentable work must emanate from an identifiable author or creator, and reflects the creator's unique personality instead of being entirely derivative or absolutely novel.[68]

The common law associates the concept of originality with the *sweat of the brow* theory. However, in the US, the requirement of originality in copyright issues has developed to negate ordinary labor, without more, which is invested in the production of a content as requisite evidence of originality for the purpose of qualifying a work for copyright protection. This idea accords with the utilitarian approach of promoting human inventive instincts and encouraging authors to acquire copyright protection for their contents. Under this approach, authors may obtain copyright by their creative efforts during the making of a patentable content, whether it be an artistic compilation of songs in a hymn book, an anthology or a database. In the case of an anthology or such other works like encyclopedia, the cognitive ability to compile, select and orderly arrange the verses in such a patentable manner is what the law may protect by copyright and not the originality *per se*. In *Hollinrake v Truswell*,[69] the idea of originality as applicable to copyright law was clarified by the English Court of Chancery. It was established in the case that the notion

[65] N. Basri, "The Question of Authorship in Computer-Generated Work", *Journal of Law & Social Change*, (2020). https://www.law.upenn.edu/live/news/9691-the-question-ofauthorship-in-computer-generated.
[66] R. C. Denicola, "Ex Machina: Copyright Protection for Computer-Generated Works", *Rutgers U. L. Rev*. 69, (2016): 280-81.
[67] J. Junaidi, P. Pujiono and R. M. Fadzil, "Legal Reforms of Artificial Intelligence's Liability to Personal Data Perspectives of Progressive Legal Theory", *Journal of Law and Legal Reforms*, 5, no. 2 (2024): 588-95.
[68] C. J. S. Azoro and Q. O. Agulefo, "Original" under the Law of Copyright is Distinct from the Ordinary Meaning of "Original": A Discourse", *International Journal of Law*, 7, (2021): 30-1.
[69] *Hollinrake v Truswell*, [1894].

of originality is more contingent on the origin or traceability to the inventor as source of the work than upon the novelty or ground-breaking-nature of a work. Simply put, a work is deemed original if it emanates from the author's own cognitive efforts rather than an external source. Consequently, it was affirmed in the case that originality concerns the independent making of a work by the author, and not the level of novelty. The emphasis on authorship and the absence of copying shed the light on the concept of originality within the jurisdiction of England and Wales. Also, in *University of London Press v University Tutorial Press*,[70] the court ruled that a work is original when it exhibits some level of labor and skill, and it is not a copy of an existing work. The Court of Justice of the European Union (CJEU) has by its rulings immensely impacted the understanding of labor and skill applied in copyright cases, particularly in the UK. The influence of the CJEU on the definition of originality is felt more in cases where the creation of a content has been dictated by technical considerations, rules or other considerations negating creative liberty.[71]

Similarly, the US courts conceive originality as requiring a minimal level of creative effort. In *Time Inc. v Bernard Geis Associates*,[72] a district court in the US relying on the authority of *Sarony's case* made reference to the concept of originality and recognized the element of personality in the creation of a photograph, such as the choice of subject, framing, and timing. The court acknowledged the visual attraction and artistic composition of a photograph without evaluating the artistic merit, skill, or effort involved in the making of the photograph. In the case of *Baltimore Orioles v MLB Players Association*,[73] the US Court of Appeals for the Seventh Circuit clarified the threshold of originality, stating its two broad distinguishing requirements. These requirements are distinct originator and a scintilla of creativity. The idea of distinct origin implicates the "origination" of the work from the author's own creativity rather than being an imitation of existing content. In addition, the idea of minimal creativity accommodates the smallest level of cognitive effort necessarily contingent if a content must survive the originality test. Furthermore, the Court of Appeal has asserted two critical ingredients of originality.[74] These are, independence of creativity by an author and minimal standard of uniqueness, newness or novelty. The purport of this decision is that a work should not ordinarily be a copy or imitation of an existing work, it must necessarily possess the ingredient of newness or distinctiveness for it to accord with the originality threshold. To this end, the case of *Feist Publications Inc. v Rural Service Co*.,[75] is instructive. In the case, the US Supreme Court laid down the express requirements for a work's copyrightability. The Court stated two critical conditions which a work should fulfill for it to enjoy copyright protection. Accordingly, the work must emanate from an author acting independently as well as exude minimal cognitive intellectual investment. This entails a modest degree of intellectual creativity which transcends passive facts or data. The intellectual imprint made by the inventor on a work sought to be patented must be genuine and apparent.

The foregoing desiderata re-enact the arguments as to which of opposing theories of subjective and objective criteria should pass for the proper determination of originality for the purpose of the operations of copyright law. The impact of these opposing arguments on originality of contents created by technical means is enormous. However, Dai and Jin (2023: 241) posit that none of the opposing theories has effectively determined the threshold of originality in isolation.[76]

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[70] *University of London Press v University Tutorial Press* [1916]

[71] *Newspaper Licensirng Agency Ltd v Meltwater Holding BV,* [2011]

[72] *Time Inc. v Bernard Geis Associates* [1968].

[73] *Baltimore Orioles v MLB Players Association,* 805 F.2d 663 [1986].

[74] *Alfred Bell & Co. Ltd. v Catalda Fine Arts, Inc. et al.,* 191 F.2d 99 [1951]

[75] *Feist Publications Inc.* (n. 43).

[76] Z. Dai and B. Jin, "The Copyright Protection of AI-Generated Works under Chinese Law", *Juridical Tribune* 13, (2023): 241.

The subjective theory conceives originality on the bases of the individual author's subjective creativity and personal expression. A strict application of this theory to AI-generated contents is capable of undermining the copyright system by excluding such contents from copyright protection. Conversely, the objective theory relies on such objective ingredients like skill, effort, or labor invested in the work by the author. The danger of this theory in its strict application is the likelihood of attributing copyright to entities or persons with doubtful inventive contribution to the work. To this end, both civil law and common law jurisdictions appreciate the need for a balanced approach in order to overcome these shortcomings. There is the need to discover a middle ground that accommodates the complex idea of originality in respect of AI-generated contents. The sole attention on novelty must give way to the discovery as to whether a genre is originated by the author and not a smart imitation of an existing work. Common law jurisdictions elevate authorship element over novelty in their concept of originality. The case is therefore made for the avoidance of both extremes of subjective and objective theories as the global copyright system seeks to sustain a fair, pragmatic and dynamic copyright regime that allows for the uncommon features of AI-generated contents.

In contrast to the UK and the US common law approaches, civil law countries of Europe conceive originality in accordance with the decisions of the CJEU. In these jurisdictions, more premium is placed on the apparent nexus between the author and the product than on rewarding the skill and labor committed into the creation process of the work. Consequently, originality is generally a product of inevitable, indisputable link with paternity. The emphasis is on the relevance of the individual author's relationship with the work. The civil law jurisdictions give prominence to moral rights which derive from subjective theory. The subjective of rights encompass the vantage position of the author to take credit for his work, to control its use and to defend its abuse. Although the subjective approach identifies with these moral rights, critics of the idea posit that it fails to sufficiently address the peculiar configuration of AI-generated genres.[77] The strict application of subjective theory argument may subject the law to unclear and ambiguous interpretations in the context of AI-generated contents. This is because as AI machines generate contents independent of human intervention, the established condition for originality anchored on the author's personality loses applicability. This invariably interrogates the question as to whether AI-generated contents can fulfill the legal requirements for copyrightability under a purely individualistic approach.

From the foregoing deductions, it is posited that an effective test of originality in cases involving AI-generated contents should engage a nuanced understanding of both subjective and objective theory perspectives. The trend reveals a drift towards a balanced authorship-based approach with constructive consideration of the particular challenges posted by AI-generated contents. To this end, French courts have moved from the strict requirement of personality to a more dynamic and flexible regime. This implicates that the courts may be more concerned with the efforts made by authors to imprint their individuality in order to determine how authors express their personality through their work. The law is now settled that creative freedoms is a critical index in demonstrating the author's personality.[78]

2.9 *Constructing originality in copyright law beyond domestic boundaries*

It is expedient to explore the idea of originality at international level before engaging with originality as an integral requirement for copyrighting AI-generated works. The Berne Convention is pivotal in the discourse of originality and sundry copyright features in addressing the protection of contents and the status of their authors in relation to such contents. Although

[77] C. Yoo, "Rethinking Copyright and Personhood", *University of Illinois Law Review*, (2019): 1049.
[78] Dai and Jin, (n. 79).

the notion of "originality" is not expressly defined, it may be deduced in context from Article 2(3) of the BC, which provides that translations, adaptations, musical arrangements, and other alterations of a literary or artistic work shall be protected as original works. The Article implicates that these derivative works are qualified for autonomous copyright protection. The provision raises an inference of element of originality which in the circumstances should be inherent in the work. The idea of originality may also be alluded to from the tenor of Article 2(5), which relates to collections of artistic and literary genres, such as books of reading, encyclopedias, hymnbooks and collection of poetic verses. These collections are for the purpose of the cognitive investments made in the ordering, editing and selections of their contents entitled for copyright protection. Article 2(5) appreciates the fact that such assemblage and orderly placements of the songs, articles and poems as the case may be, demand cognitive ingenuity and labor, entitling them to protection which operates independently from the copyrights of the particular works that were compiled. The case is the same for genres translated from one language to another. The translator may enjoy 'translation copyright' distinct from the rights of protection accorded the originator of the genre. This is so important as some works garner more patronage and enjoy more visibility upon such improvements like translation, compilation and so on. The BC therefore emphasizes the imperativeness legal protection by means of copyright operations for genres that assemble intellectual investment, underscoring their propriety so long as they showcase their creator's cognitive productivity and creative uniqueness. BC confirms the eligibility of such cognitive, creative outputs for protection under the copyright regime by recognizing such assemblages and conferring originality on them as contents emanating from the creative discretions and labor of the editor, translator or compiler, as may be appropriate.

Of particular relevance to the determination of whether or not AI-invented contents should be protected under the copyright legal regime is Article 2(1) of the BC. This provision gives an expansive conception of literary and artistic works extending it to all creations in the literary, scientific, and artistic domain, regardless of their mode or form of expression.[79] The result is that while the Berne Convention harps on originality as indispensable ingredient for copyright protection, it fails to address the eligibility of AI-generated contents with particularity because AI capacity was not within the contemplation of the drafters of the instrument at the time.

The inability of the BC to accommodate AI-generated contents notwithstanding, the seeming flexibility of the instrument allows municipal legislations to define certain requirements for copyright protection. To this end, domestic laws such as Nigerian Copyright Act (2023)[80] stipulates works, in general or within particular categories, to be fixed in a tangible or such other material forms to qualify for copyright protection. The statute guarantees that works are properly situated for copyright regime as long as they are stored in a prescribed tangible medium. Works in this regard includes AI-generated contents. The standard for the determination of specific threshold of originality which allows for copyright protection in AI-generated works is set by extant municipal and regional laws within the jurisdiction of the author. Consequently, the requirement and substance of originality that may warrant copyright protection varies from country to country.

[79] The expansive list provided under Article 2(1) of the Berne Convention include books, cinematographic works, paintings, photographic works and works relating to geography, topography, architecture or science, among others.

[80] The legal architecture engaged in attributing copyright to AI-generated works strikes at the core of the social purpose for which the copyright legal system evolved.

2.10 *The EU's approach to the issue of originality in copyright law: The interventions of the judiciary*

Originality is a critical factor touching on the substance of copyright protection in municipal legal frameworks in Europe. It has persistently been engaged as a standard to assess any work presented for copyright protection.[81] Nevertheless, the European Directives[82] construe originality particularly for computer programs, databases, and photographs as intellectual creation of the author. However, the EU Directives or law have neither recommended a universal criterion for determining originality nor made such prescription a prerequisite for legal protection under copyright safe in cases relating to databases, computer programs and photographs.[83] To this end, it is safe to posit that originality does not qualify as a prerequisite for determining the qualification of a content for protection under EU copyright law. The truth is that the Court of Justice of the European Union (CJEU) has been instrumental in fashioning the idea of originality and its application to addressing the challenges presented by AI-generated contents.[84] The traditional notion of originality, being author's personal intellectual product was limited in application to some class of contents. It took the intervention of the CJEU to extend the application to a wider range of contents, particularly the AI-generated works.

In *Infopaq International A/S v Dariske Dagblades Forening*,[85] the CJEU enacted the ingredient of originality as the author's own intellectual product. The court reiterated the importance of a genre showcasing creativity ventilated through the author's independent choice, sequence, and combination of words. Thus, the author may acquire originality in an expression by these creative requirements, manifesting in an intellectual creation. *Infopaq International A/S v Danske Dagblades Forening* is a landmark decision that illuminates the hitherto complicated matrix of copyright violation and the recent technology in evolving business patterns, specifically with regards to content aggregation. It should be further noted that the European concept of originality, which revolves around the author's cognitive productivity, is not limited to the particular categories listed in the law which include software, databases and images. On the contrary, this template applies to all genres within the scope of the Berne Convention within the jurisdiction of the European Union. The court has laid down two broad conditions that must be met by any work seeking protection under the copyright law. In *Levola Hengelo BV v Smilde Foods BV*,[86] the CJEU pronounced on the issue of copyright protection under Directive 2001/29 which focuses on aspects of copyright related to rights in the information society among others.[87] The CJEU established that a work eligible for copyright protection must satisfy two conditions which are cumulative.

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[81] T. Margoni, "The Harmonisation of EU Copyright Law: The Originality Standard", *Social Science Research Network (*2016). https://ssrn.com/abstract=2802327.

[82] See, Directive 91/250/EEC (Software Directive); Directive 2009/24/EC, Directive 96/9/EC (Database); Directive 2006/116/EC (Copyright Term Directive, with regard to photographs) and Directive 2001/29/EC (Directive on the harmonisation of certain aspects of copyright and related rights in the information society).

[83] European Artificial Intelligence Act, 2021.

[84] Kgoale, T. J.and Odeku, K. O. (2023). "An Analysis of the International and European Union Legal Instrument for Holding Artificial Intelligence Accountable", *Juridical Tribune* 13, no. 3 (2023): 431.

[85] *Infopaq International A/S v Dariske Dagblades Forening* [2009].

[86] *Levola Hengelo BV v Smilde Foods BV* [2018].

[87] Z. Li, "Regulating Online Algorithmic Pricing: A Comparative Study of Privacy Data Protection Laws in the EU and US", *TTLF Working Papers No. 114,* (2024): 10.

The foremost criterion is that the content sought to be patented must be original, which implies that it must be the product of the author's own intellectual creativity.[88] Sequel to the foregoing, and in line with the decision in *Levola Hengelo BV v Smilde Foods BV*,[89] the court held that a content properly described as 'work' within the ambit of Directive 2001/29 must necessarily be the expression of the author's personal intellectual creation. Similar rules were laid down in the case of *Eva-Maria Painer v Standard Verlags GmbH* and Others, [90] by the European Court. In the foregoing case, the CJEU determined whether a photograph used as a template for a photofit could be considered an original work emanating from the intellectual product of the applicant. The phrase "original work resulting from the intellectual creation" is not expressly captured in Directive 93/98 or Directive 2006/116 thereby bringing it within the ambit of Union law concept deserving of independent interpretation. A proper definition of this concept requires reference to the recitals to Directive 93/98 and Directive 2006/116, which alludes to the Revised Berne Convention. The community reading of the 16th and 17th Recitals in the Preambles to Directives 93/98 and 2006/ 116 respectively informs that an original work of photography work is such that reflects the author's intellectual creation and personality. The purport of Article 6 of both Directives 93/98 and Directive 2006/116 is to establishes that human creations alone are capable of copyright protection, irrespective of such technical tools and aids such as cameras which are deployed in the process of creativity. This implicates that any content which emanates from the application of human creative capacity, even with the assistance of technical tools, can be protected under copyright law. Another case relevant to the foregoing jurisprudence *is Cofemel v G-Star*.[91] In the case, the CJEU established that originality of work necessarily entails that the work reflects the personality of its author freely expressing creative liberties. The basic conclusion is that the work sought to be patented must be the product of the author's own intellectual creation. What has continued to elicit argument is the standard indices to be used to determine the degree of human involvement required to prove originality. Mengozzi advocates that such standards be left for decision by municipal courts.[92]

2.11 *Copyright protection for AI-invented contents in the European Community*

Through the cases, the CJEU has unequivocally shown that originality is critical to the determination of whether or not the copyright law applies to particular literary and artistic genres within the EU jurisdiction. This stance is not dwindled by the mode, means or form of creation. However, a critical appraisal of the ECJ's case law shows that AI-generated contents are not accommodated within this rather sweeping construction. In *Football Dataco Ltd v Yahoo! UK Ltd*,[93] the court's decision was to the effect that a work can be acknowledged as an intellectual creation if it radiates the personality of its author. The inherent personality quality arises when the author enjoys freedom of discretion in the invention process of the content. The court held that where the qualities of a content are predictably determinable by its technical configuration,

[88] *Football Association Premier League Limited et al v Youtube, Inc. et al* No. 1 cv 03582 – Duc 303, S.D.N.Y., [2010].

[89] *Levola Hengelo BV,* (n. 86): 34-7.

[90] *Eva-Maria Painer v Standard Verlags GmbH* and Others (Third Chamber) ECR -12533, [2011].

[91] ECLI: EU:C: *Cofemel v G-Star Raw*, [2019] 731.

[92] In *Football Dataco Ltd and Others v Yahoo! UK Ltd and others*, Advocate-General Mengozzi opined as follows, "Clearly, it is not possible to define, once and for all and in general terms, what constitutes an 'intellectual creation'... In any event, if ever that assessment is required, it is for the national courts to undertake it on the basis of the circumstances of each individual case."

[93] *Football Dataco Ltd v Yahoo! UK Ltd*, [2011] ECDR 9.

the requisite level of originality may be presumed to be absent. This decision may be applied to computers or robots so specifically programmed to generate certain contents in such a manner as to negate discretion. The point is made that a content cannot be deemed as original where its creation purely depended on technical parameters, prescriptions, or other constraints that are lacking in creative freedom. Thus, in *Cofemel v G-Star* the court stated the law rightly in respect of originality of AI-generated works when it held the presence of creative freedom as a crucial factor in the determination of the level of originality that qualifies a work for copyright protection.[94] The reasoning in *Cofemel v G-Star* was amplified in *Bromptorn Bicycle Ltd v Chedech/Get2Get*,[95] where the court reiterated that if a work lacks the necessary creative freedom due to such "programmed" constraints, it cannot be said to possess the requisite level of originality to be accorded protection under the law.

The foregoing case laws give the impression that the law denies copyright protection to AI-generated contents. This impression may be dispelled in practical terms. This is because the assessment of copyright-ability of AI-generated contents are not entirely dependent on the overwhelming technical considerations involved in the creation process. Technical considerations necessarily give way to considerations of other conditions underpinning originality such as the reflection of author's personality through free and creative liberties devoid of technical constraints.[96] The law appears to lean in favor of such AI-generated contents which were not solely generated by the machine or produced in a pre-determined form, which implicates absolute robotics. The law, therefore admits of collaboration between AI and the human contributors.[97] The justification for this state of the law underlines the copyright legal regime which aims at encouraging inventions, creativity and originality by guaranteeing benefits of such labor in favour of the human originator.[98] This is the rationale underlying the view that the definition of "author" has been heavily impacted by the evolution of AI-generated contents.

Jurists have therefore, raised salient queries in the light of the extant conception of the "author" of an AI-generated work, which is often described as "the person by whom the arrangements necessary for the creation of the work are undertaken." Consequently, the issue as to whether the EU's prevailing approach perfectly accommodates the peculiar features and challenges posed by computer-generated works becomes topical. A recalibration of the EU approach becomes apposite for proper adaptation and alignment with the emerging ecosystem of innovation and authorship, particularly with regards to AI. Such a rejig would guarantee a more encompassing and viable legal architecture for the protection and beneficial reward of creative computer-generated works such as to cater for the interests of human programmers without stifling technological innovations. The foregoing proposal may enlarge the definition of authorship to include persons whose contributions reasonably supported the making of a work sought to be copyrighted. The definition transcends persons who are traditionally clothed with the capacity to autonomously generate such contents. It would accommodate the collaborative tendencies in creative processes by acknowledging and granting rights in the finished work to persons who provided substantial aid or guidance which made the work a possibility. This, engenders inclusivity and equity in the rewards and incentive system of copyrighted works.

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[94] P. Zurth, "Artificial Creativity? A Case Against Copyright Protection for AI-Generated Works", *UCLA Journal of Law & Technology*, 25, no. 2 (2021): 1-22.

[95] *Bromptorn Bicycle Ltd v Chedech/Get2Get,* C-833/18, [2020] 24.

[96] Ibid.

[97] N. Martinez, "Can an AI Machine Hold Copyright Protection Over Its Work?" *Artrepreneur Art Law Journal*, (2017).https://alj.artrepreneur.com/al-machine-copyright/.

[98] V. Ahuja, "Artificial Intelligence and Copyright: Issues and Challenges", *ILI Law Review*, (2020). https://ssrn.com/abstract-3864922.

2.12 *Need for universal standard in copyright legal principles: Lessons from patent application*

Copyright is closely knitted with patents and trademarks as to elicit similar legal requirements particularly on issues of authorship and originality. Judicial decisions from various countries, each setting its own standard for copyright legal regime have become a great concern to the legal community and inventors at large. A case in point is the case of DABUS which cut across the UK, The US, Europe, Australia and South Africa regarding the authorship of AI-generated contents. Dr Stephen Thaler had developed the AI solution known as DABUS which invented a fractal container and a neural flame, an emergency signal light. Consequently, Dr Thaler brought an international application for the patent protection of these products in accordance with the Patent Cooperation Treaty (PCT). He specifically requested the European Patent Office (EPO), US Patents and Trade Marks Office (USPTO), the UK Intellectual Property Office (UKIPO), Australia and South Africa Copyright Offices to grant his application. In all the applications, he stated his status as the assignee of the patent rights while DABUS was identified as the inventor. It became apposite to decide on whether an AI engine could be recognized as an author under the copyright legal regime.[99]

The US rejected the invitation to grant patent and copyright to DABUS in 2020. The decision followed the precedent laid down in the case of *Beech Aircraft Corporation v Edo Corporation*,[100] in which the District Court of Kansas in the US interpreted section 115 of the US Patent Law [101] to implicate that only a human can 'invent' giving the requirement of an oath and name which is lacking in DABUS. The definition of an inventor or author as the case may be does not contemplate a machine or AI solution. Similarly, the UK turned down the application. The UK Patents Act defines an inventor as simply, "the actual deviser of an invention."[102] The UK Patents Court had hitherto stated in *University of Southampton's Application*[103] that an inventor must necessarily be a human. Europe also refused DABUS application. The Legal Board of Appeal of the European Patent Office (EPO) turned their report in December 2021. Relying on Article 81 of the European Patent Convention and Rule 19 (1) of the European Patent Convention Regulations, the EPO declared that AI machines do not enjoy any rights under the law being non-natural or legal personalities in accordance with the laws.[104]

Following the UK stride, the Australian Patent Office released a directive specifying that an inventor must be human and capable of complying with the patent requirement.[105] The decision of the Patent Office was overruled by the Federal Court of Australia in *Thaler v Commissioner*.[106] The Australian Federal Court had agreed on the need to shed off the obsolete

[99] Oriakhogba, "What If DABUS Came to Africa? (n. 10), 92.

[100] *Beech Aircraft Corporation v Edo Corporation* (990 F.2d 1237, 1993).

[101] ss. 115 & 100 (a) of the US Patent Act [U.S.Code Title 35]

[102] s. 7 (2) UK Patents Act 1977; *Thaler v Comptroller-General of Patents, Designs and Trademarks* [2020] 2412.

[103] *University of Southampton's Application* [2005] 220-42; UK Inventor – Formalities Manual, 2022.

[104] S. Shroff, "DABUS Case: Analysing the Impact of Granting a Patent to an AI Invention", *Journal of Emerging Technologies and Innovative Research* 10, no. 12 (2023): 72-77; I. A. Filipova and V. Koroteev, "Future of Artificial Intelligence: Object of Law or Legal Personality?" *Journal of Digital Technology and Law*, 1, no. 2 (2023): 359-386.

[105] Regulation 3.2C 2(a) of the Australian Patent Regulations requires an applicant for patent to supply the inventor's name.

[106] *Thaler v Commissioner,* FCA 879 [2021] 879.

meaning of inventor and embrace the emerging trend of patentable inventions and their authors. This reasoning has been criticized on several fronts.[107]

South Africa took a rather radical position on the foregoing concern with a clinical departure from the old millennium concept of authorship and so became the trail blazer in recognition of computer-generated works. The South Africa's Companies and Intellectual Property Commission (CIPC) admitted DABUS for patent. The CIPC gave a progressive interpretation to sections 27 (1) and 30 (4) of the Patent Act which stipulates who may apply for patents to accommodate AI-generated works.[108] Okorie argues that the CIPC's decision is capable of leading to absurdities because of the ethical and legal consequences as it only concentrated on compliance with formal requirements.[109] According to Zafar, there is a critical need to maintain ethical vigilance through ethical integrity in human's interaction and deployment of AI solutions.[110] The authors agree with Okorie because such legal recognition is inversely proportional to imputation of liability for injuries done or liberties taken by the invention.[111] AI is incapable of being held liable for in the light of the application for patent. In the light of the confusion thrown up by the conflicting decision by different jurisdictions on the same subject matter, the need for universal standards in the area of law has become very exigent.

3. Conclusion

The issue of copyright protection for AI-generated contents in the face of the legal threshold of originality has generated substantial discussions and legal opinions. The notion of originality is an indispensable element in the determination of qualification of any genre for copyright protection with varying adaptations across various jurisdictions. In Europe, under the EU legal system, originality is entrenched as a basic qualification for according copyright protection to artistic and literary genres. The AI phenomenon has disrupted the traditional global application of copyright law, creating discomfort, uncertainty and indecision on matters concerning authorship of AI-generated works. In order for law to retain its value as a currency of trust, it is required that legal systems around the world should engage the AI revolution in such a manner that keeps pace with the ever-evolving landscape of innovative technology. The need for a broad and forward-thinking overhaul of copyright laws around the globe has never been more exigent in human development.

This paper has engaged the concerns of copyright protection for AI-generated contents and thus made some valuable findings. In the first place, originality is a critical ingredient for a work to be eligible for copyright protection. The criterion ensures that works reflect their authors' personalities through free and creative choices. Consequently, AI-generated works which were created with human involvement can qualify for protection. This is against the stiff resistance of according fully automated works recognition for copyright protection for failure to meet the standard of uniqueness required by law. Secondly, the CJEU has been pro-active in attempting to

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[107] D. O. Oriakhogba, "DABUS Gains Territory in South Africa and Australia: Revisiting the AI-Inventorship Question", *South African Intellectual Property Law Journal*, (2021): 86-107.

[108] South Africa Patent Act no. 57 of 1978; Regulation 22(1) of South Africa Patent Regulation, 1978.

[109] D. Antunes, "Artificial Intelligence as an Inventor: A Brief Exploration of South African Intellectual Property Law", *Inventa International*, (2023). https://inventa.com.

[110] A. Zafar, "Balancing the Scale: Navigating Ethical and Procedural Challenges of Artificial Intelligence (AI) Integration in Legal Practices", *Discover Artificial Intelligence* 4, no. 27 (2024):1.

[111] A. Guadamuz, "A Scanner Darkly: Copyright Liability and Exceptions in Artificial Intelligence Inputs and Outputs", *GRUR International* 73, no. 2 (2024): 111-127; S. Heiss, "Artificial Intelligence & Civil Liability in Light of the EU's AI Act and President Biden's Executive Order", *TTLF Working Papers No. 112*, (2024): 19-30.

shine the light in this rather opaque area by its interpretation of originality and by establishing the importance of creative freedom and the absence of technical constraints in the construction of originality. The third important aspect is the need for current debates and future statutory amendments to take cognizance of the peculiar difficulties presented by AI-generated contents which include issues of ownership, attribution and the concept of authorship. The foregoing findings underscore the urgency for a broad legal framework that recognizes the collaborative nature of AI-generated works and guarantees adequate protection for both human creators and technological advancements. It is therefore, suggested for policymakers and researchers to concentrate on diverse areas that are fundamental in addressing the opportunities and challenges posed by AI-generated contents. In so doing, caution should be exercised to preserve the traditional copyright framework without eroding the exponential relevance of innovative generative AI. Further research may need to be empaneled in these areas for the clarification of the threshold of originality and alternative criteria that accommodate AI's special circumstances.

The importance of international collaboration in the establishment universal parameters and guidelines that would engender cross-border consideration of AI-generated contents for copyright protection cannot but be emphasized. Such universal guidelines should address critical concerns of bias, fairness and accountability in the AI creative channels. The framework should also engage appropriate attribution process peculiar to AI-generated contents as well as standardized licensing regime for recognizing ownership by human creators. Efforts should be made to enlighten the public to raise awareness and mold the understanding of innovators, programmers, consumers, the *judex* and the general public about AI-generated contents as regards rights, liabilities and obligations associated with copyrighted works. The adoption of the foregoing suggested recommendations would assist policymakers and researchers to create an adaptive legal framework that would power innovation, preserve rights and guarantee sustainable uses of generative AI's creative candor.

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